NEW CLAIMS 6-10

SUB C3

6. A circuit arrangement for the dynamic control of ceramic solid-state actuators in the form of piezotranslators with energy recovery by means of a single inductive intermediate store, which is arranged in series with the piezotranslator, as well as by clocked switches arranged in a half-bridge, wherein, for achieving a predetermined linear voltage characteristic at the piezotranslator, a current control comprising a current sensor controls the clocked switches of the half-bridge at a high clock or switching frequency and wherein a position control is superimposed on the current control.

7. The circuit arrangement according to claim 6, wherein the intermediate store is arranged in close proximity to the piezotranslator.

B1

8. The circuit arrangement according to claim 6, wherein, for controlling the arrangement, the current sensor is arranged in the secondary circuit of the piezotranslator for determining a control voltage that is proportional to an output voltage of a final stage, wherein the control voltage is supplied to a first input of a first controller, wherein the second input of the first controller is connected to an output of a second controller having two inputs supplied with a predetermined reference variable according to the physical position of the piezotranslator and with an actual value which is proportional to the output voltage of the final stage.

9. The circuit arrangement according to claim 6, wherein a voltage control is provided, wherein the position control is superimposed on the voltage control and the voltage control is superimposed on the current control.

10. The circuit arrangement according to claim 9, wherein, for

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improving the dynamic behavior of the control action, the voltage control feeds back the integral of the piezotranslator current instead of a voltage which is proportional to the output voltage of the final stage.

CLEAN COPY OF AMENDED CLAIMS 1 THROUGH 4

SUB C1

1. (Amended) A circuit arrangement for the dynamic control of piezotranslators (2) with energy recovery by means of a single inductive intermediate store (1) which is arranged in series with the piezotranslators (2) as well as by clocked switches, wherein for achieving a predetermined linear voltage characteristic at the piezotranslator (2), the secondary circuit is designed as a half-bridge consisting of the clocked switches (3, 4) at whose output the inductive intermediate store (1) is arranged in series with the piezotranslator (2), with the clocked switches (3, 4) being externally controlled and operated at a high cycle or switching frequency in such a manner that the intermediate store is alternately connected with an upper or lower supply voltage ((UB/2) at the most, with the series connection of piezotranslator (2) and inductive intermediate store (1) carrying a superimposed bridge direct current; wherein the clocked switches (3, 4) are formed as MOS transistors (9), with an external diode (10) being connected in series with the clearance between contacts, and this series connection being bridged by a commutating diode (11) which is oppositely poled to the diode (10).

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2. (Amended) The circuit arrangement according to claim 6, wherein the clocked switches (3, 4) are formed as MOS transistors (9), with an external diode (10) being connected in series with the clearance between contacts, and this series connection being bridged by a commutating diode (11) which is oppositely poled to the diode (10).

SUB C2

3. (Amended) The circuit arrangement according to claim 1, comprising a final stage (18), wherein a current sensor (12) for generating a control voltage which is proportional to the output current of final stage (18) is arranged in the secondary circuit of the piezotranslator (2) for controlling the arrangement, with

the control voltage being connected with a first input of a first controller (13), wherein a second input of the first controller (13) is applied at an output of a second controller (14), at whose two inputs a predetermined reference variable according to the physical position of the piezotranslator (2) and an actual value which is proportional to the output voltage of the final stage (18) are applied.

B2 Cont Sub C2 Cancel

4. (Amended) The circuit arrangement according to claim 3, wherein a third controller (19) is provided for a positioning control, at whose first input the reference variable of the physical position of the piezotranslator (2) and at whose second input a mechanical actual value which is detected via a sensor (20) of the piezotranslator (2) are applied, with the output of the third controller (19) being connected with one of the inputs of the second controller (14).